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EDUCATION

University of Southern California, Marshall School of Business <i>MBA – Finance & Entrepreneurship</i> <ul style="list-style-type: none">Dean’s Honor List Provident Endowed Fellow Union Bank Scholar	Los Angeles, CA 2015
Drexel University <i>Ph.D. – Chemical & Biological Engineering</i> <ul style="list-style-type: none">Best Doctoral Dissertation Award in Engineering George Hill Endowed Fellow	Philadelphia, PA 2007
Amir Kabir University of Technology <i>B.Sc. – Polymer Engineering</i> <ul style="list-style-type: none">Chair of Undergraduate Student Association	Tehran, Iran 2002

ACADEMIC CAREER CHRONOLOGY

University of South Carolina <i>Associate Professor & Director of Entrepreneurship, College of Engineering and Computing</i>	Columbia, SC 2016 – Present
University of South Carolina <i>Assistant Professor of Chemical & Biomedical Engineering</i>	Columbia, SC 2010 – 2016
California Institute of Technology <i>Post-doctorate – Division of Engineering & Applied Sciences</i>	Pasadena, CA 2007 – 2010
Drexel University <i>Graduate Research Assistant, Department of Chemical Engineering</i>	Philadelphia, PA 2003 – 2007

ENTREPRENEURSHIP

Stealth Mode Startup Company <i>Founder</i> A drug discovery company founded based on 5 provisional patents on the use of natural compounds in immune-oncology and regenerative medicine.	Columbia, SC 2016 – Present
Riverside Company <i>Consultant</i> A global private equity firm focused on acquiring growing businesses valued at up to \$300 million. Since its founding in 1988, Riverside has invested in more than 380 transactions. The firm’s portfolio includes 75 companies. <u>Selected consulting projects</u> Analyzed 2 potential acquisitions in life sciences tools and services. Determined product demand, customer base, scalability, competition, financial performance, risks and exit outlook.	Los Angeles, CA Summer 2014
Pasadena Angels <i>Consultant</i> A nonprofit entity founded in 2000 with interest in early-stage start-up ventures in the Greater Los Angeles area. The group has invested more than \$30 M in 26 startups, from \$100 thousand up to \$1.5 million in early-stage and seed funding. <u>Selected consulting projects</u> Screened 8 potential investments, communicated screening information to the angel network, and performed due diligence on 3 recommended opportunities to facilitate capital allocation decisions.	Pasadena, CA Spring 2014

ACADEMIC LEADERSHIP

University of South Carolina

Director of Entrepreneurship, College of Engineering and Computing

Columbia, SC
2016 – Present

- PI and Director for the University of South Carolina NSF I-Corps Site.
- Founding Director of MS degree program in Entrepreneurial Engineering for both engineering and non-engineering students.

MENTORING & TEACHING EXPERIENCE

University of South Carolina

Postdoctoral scholars

Columbia, SC

- Sara Moghadam – “Medicinal Plants in Wound Healing”
- Maria Yanez – “The Use of Resveratrol to Control Inflammatory Response to Biomaterials”
- Marina Pryzhkova – “Unravelling the Role of Cell Geometrical Cues in Regulation of Embryonic Stem Cell Differentiation”

Doctoral students

- Wesley Taylor – “The use of Medicinal Plants for Cancer Therapeutics”
- Maria Piroli – “Culture and Maintenance of Embryonic Stem Cells at a Single Cell Level”
- Gregory Harris (currently a postdoc at Princeton University) – “Parsing The Effects of Matrix Mechanical Properties on Stem Cell Lineage Specification”
- Katherine Rutledge (currently a scientist at Nephron Pharma) – “Engineered 3D Microenvironments To Direct Osteogenic Differentiation and Modulate Inflammation”
- Qingsu Cheng (currently a postdoc at Lawrence Berkeley national Lab) – “Carbon Nanotubes As Modulators of Extracellular and Transporters of Intracellular Cues”

Undergraduate students

- Marc-Olivier Blais, – “Carbon Nanotube Based Aligned Substrates for Cell Studies”
- James Cormany – “Induction of Osteogenic Differentiation Using Hydroxyapatite”
- Jason Lauer – “Micro-patterning Substrates for Control of Cell Spreading”
- Christopher Wu – “Fabrication of Sponge Scaffolds for bone repair”
- Callie McCarty – “Phytochemical analysis of medicinal plants for wound healing”

Classes taught as a professor

- ENCP 460: Entrepreneurial Engineering (1 semester)
- BMEN 354: Biotransport (2 semesters)
- BMEN 389J: Stem Cell Engineering (3 semesters)
- BMEN 389H: Engineering Cancer Therapeutics (1 semester)
- ECHE 300: Introduction to Chemical Engineering Process Principles (3 semesters)
- BMEN 271: Introduction to Biomaterials (1 semester)

California Institute of Technology

Pasadena, CA

- Mentor for undergraduate students Lily Li, Stella Hartono and Anne-Floor Velt

Drexel University

Philadelphia, PA

Teaching Assistant

- Mass Balance (1quarter), Process Modeling I (1 quarter), Process Fluid Mechanics (1 quarter), Process Thermodynamics (1 quarter), Chem. Eng. Lab I (1 quarter)

JOURNAL PUBLICATIONS

24. M. Yanez, J. O. Blanchette, and **E. Jabbarzadeh**, “Immunophysiological modulation of inflammatory response to biomaterials using natural products”, *Current Pharmaceutical Design* (In Press).
23. W. F. Taylor and **E. Jabbarzadeh**, “The Use of Natural Products to Target Cancer Stem Cells,” *American Journal of Cancer Research* 7 (7), 1588 (2017).
22. K. E. Rutledge, Q. Cheng and **E. Jabbarzadeh**, “Modulation of inflammatory response and induction of bone formation based on combinatorial effects of resveratrol,” *Journal of Nanomedicine and Nanotechnology* 7, 10 (2016).

21. M. L. Skiles, B. Hanna, L. Rucker, A. Tripton, A. Brougham-Cook, **E. Jabbarzadeh**, and J. O. Blanchette, "ASC Spheroid Geometry and Culture Oxygenation Differentially Impact Induction of Preangiogenic Behaviors in Endothelial Cells," *Cell Transplantation* 24(11): 2323-35 (2015).
20. M. V. Pryzhkova, I. Aria, Q. Cheng, G. Harris, M. Gharib, and **E. Jabbarzadeh**, "Carbon nanotube based substrates for modulation of human pluripotent stem cells," *Biomaterials* 35(19): 5098-5109 (2014).
19. G. Harris, M. E. Piroli, and **E. Jabbarzadeh**, "Deconstructing the effects of matrix elasticity and geometry in mesenchymal stem cell lineage commitment," *Advanced Functional Materials* 14: 2396-2403 (2014).
18. K. Rutledge and **E. Jabbarzadeh**, "Nanoengineered Platforms to Guide Pluripotent Stem Cell Fate," *Journal of Nanomedicine and Nanotechnology* 5 (212): 2-8 (2014).
17. M. V. Pryzhkova, G. Harris, S. Ma, and **E. Jabbarzadeh**, "Patterning pluripotent stem cells at a single cell level," *Journal of Biomaterials and Tissue Engineering* 3(4): 461-71 (2014).
16. K. Rutledge, Cheng G., M. V. Pryzhkova, Harris, and **E. Jabbarzadeh**, "Enhanced Differentiation of Human Embryonic Stem Cells on Extracellular Matrix-Containing Osteomimetic Scaffolds for Bone Tissue Engineering," *Tissue Engineering* 20(11): 865-874 (2014).
15. Q. Cheng G. Harris, S. Ma, Marc-Olivier Blais, Katy Rutledge and **E. Jabbarzadeh**, "Alignment of carbon nanotubes: An approach to modulate cell orientation and asymmetry," *NanoLife* 4(01) (2013).
14. G. Harris, T. Shazly, and **E. Jabbarzadeh**, "Deciphering the combinatorial roles of geometric, mechanical, and adhesion cues in regulation of cell spreading," *PLoS One* 8(11) e81113 (2013).
13. Q. Cheng, G. Harris, and **E. Jabbarzadeh**, "PLGA-Carbon Nanotube Conjugates for Intercellular Delivery of Caspase-3 into Osteosarcoma Cells," *PLoS One* 8(12) e81947 (2013).
12. G. Harris, K. Rutledge, and **E. Jabbarzadeh**, "Strategies to direct angiogenesis within scaffolds for bone tissue engineering," *Current Pharmaceutical Design* 19(19): 3456-65 (2013).
11. Q. Cheng, K. Rutledge, **E. Jabbarzadeh**, "Carbon nanotube-poly(lactide-co-glycolide) composite scaffolds for bone tissue engineering applications," *Annals of Biomedical Engineering* 41(5) 904-16 (2013).
10. **E. Jabbarzadeh**, J. Blanchette, T. Shazly, A. Khademhosseini, G. Camci-Unal, and C. T. Laurencin, "Vascularization of biomaterials for bone tissue engineering: current approaches and major challenges," *Current Angiogenesis*, 1(3): 1-12 (2012).
9. **E. Jabbarzadeh**, M. Deng, Q. Lv, T. Jiang, Y. M. Khan, L. S. Nair, and C. T. Laurencin, "VEGF incorporated biomimetic poly(lactide-co-glycolide) sintered microsphere scaffolds for bone tissue engineering," *Journal of Biomedical Materials Part B*, 100(8):2187-96 (2012).
8. T. Jiang, S. P. Nukavarapu, M. Deng, **E. Jabbarzadeh**, M. D. Kofron, S. B. Doty, W. I. Abdel-Fattah, C. T. Laurencin, "Chitosan-poly(lactide-co-glycolide) microsphere based scaffolds for bone tissue engineering: in vitro degradation and in vivo bone regeneration studies," *Acta Biomaterialia* 6(9):3457-70 (2010).
7. **E. Jabbarzadeh**, T. Starnes, Y. M. Khan, T. Jiang, A. J. Wirtel, M. Deng, Q. Lv, L. S. Nair, S. B. Doty and C. T. Laurencin, "Induction of angiogenesis in tissue engineered scaffolds designed for bone repair: A combined gene therapy-cell transplantation approach," *Proceedings of the National Academy of Sciences* 105:11099-11104 (2008).
6. **E. Jabbarzadeh**, T. Jiang, M. Deng, L. S. Nair, Y. M. Khan and C. T. Laurencin, "Human endothelial cell growth and phenotypic expression on three dimensional poly(lactide-co-glycolide) sintered microsphere scaffolds for bone tissue engineering," *Biotechnology Bioengineering* 98:1094-1102 (2007) [**Press Coverage**].
5. **E. Jabbarzadeh**, M. Deng, L. S. Nair, Y. M. Khan and C. T. Laurencin, "Apatite nano-crystalline surface modification of poly(lactide-co-glycolide) sintered microsphere scaffolds for bone tissue engineering," *Journal of Biomaterial Science Polymer Edition* 18:1141-1152 (2007).
4. **E. Jabbarzadeh** and C. F. Abrams, "Strategies to enhance capillary formation inside biomaterials: A computational study," *Tissue Engineering* 13:2073-2086 (2007) [**Press Coverage**].
3. **E. Jabbarzadeh** and C. F. Abrams, "Simulation of chemotaxis and random motility in 2D random porous domains," *Bulletin of Mathematical Biology* 69:747-764 (2007).
2. **E. Jabbarzadeh** and C. F. Abrams, "Chemotaxis and random motility in unsteady chemoattractant fields: A computational study," *Journal of Theoretical Biology* 235:221-232 (2005).
1. **E. Jabbarzadeh** and C. F. Abrams, "Fundamental limits on the efficacy of intercellular communication by diffusion," *Journal of the Physical Society of Japan* 74:1139-1141 (2005).

CONFERENCE PRESENTATIONS

25. **E. Jabbarzadeh**, K. E. Rutledge, and M. Yanez “Modulation of Inflammatory Response for Accelerated Tissue Vascularization and Bone Regeneration” American Chemical Society Annual Meeting, San Francisco, CA (2016).
26. **E. Jabbarzadeh**, “Programming Stem Cell Fate in an Inflammatory Microenvironment,” NIH National IDeA Symposium of Biomedical Research Excellence, Washington DC (2016).
23. K. E. Rutledge and **E. Jabbarzadeh**, “Resveratrol nanoparticle-incorporated scaffolds to modulate inflammation and promote osteogenesis,” Society for Biomaterials Annual Meeting, Charlotte, NC (2015).
22. G. Harris and **E. Jabbarzadeh**, “Parsing the role of cell asymmetric division in regulation of stem cell lineage specification” American Chemical Society Annual Meeting, New Orleans, LA (2013).
21. G. Harris and **E. Jabbarzadeh**, “Dissecting the role of asymmetric division in control of stem cell lineage specification,” Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA (2013).
20. Q. Cheng and **E. Jabbarzadeh**, “Carbon nanotubes-PLGA conjugates for the delivery of pro-apoptotic transcription factors in osteosarcoma cells,” Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA (2013).
19. K. E. Rutledge, Q. Cheng and **E. Jabbarzadeh**, “Physiological programming of human embryonic stem cells in osteomimetic scaffolds,” Annual Meeting of the American Institute of Chemical Engineers, San Francisco, CA (2013).
18. Q. Cheng and **E. Jabbarzadeh**, “Carbon nanotubes as protein/gene delivery carriers” American Chemical Society Annual Meeting, New Orleans, LA (2013).
17. K. E. Rutledge, and **E. Jabbarzadeh**, “Osteomimetic scaffolds for bone repair” American Chemical Society Annual Meeting, New Orleans, LA (2013).
16. M. Pryzkova and **E. Jabbarzadeh**, “Carbon nanotube-based substrates with tunable nanostructure and mechanics for the embryonic stem cell culture and differentiation,” Biomedical Engineering Society Annual Fall Meeting, Atlanta, GA (2012).
15. Q. Cheng and **E. Jabbarzadeh**, “Carbon nanotubes for no viral delivery of genes within cells,” Biomedical Engineering Society Annual Fall Meeting, Atlanta, GA (2012).
14. G. Harris and **E. Jabbarzadeh**, “Parsing the interplay between mechanical stiffness and cell shape in regulation of stem cell fate,” Biomedical Engineering Society, Atlanta, GA (2012).
13. K. E. Rutledge and **E. Jabbarzadeh**, “ In-vitro evaluation of embryonic stem cell osteogenic differentiation on extracellular matrix coated three dimensional scaffolds for bone repair” Biomedical Engineering Society Annual Fall Meeting, Atlanta, GA (2012).
12. G. Harris and **E. Jabbarzadeh**, “Control of cell adhesion and migration using nanoengineered substrates,” Annual Meeting of the American Institute of Chemical Engineers, Minneapolis, MN (2011).
11. Q. Cheng and **E. Jabbarzadeh**, “in-vitro evaluation of poly(lactide-coglycolide)/carbon nanotube scaffolds for bone tissue engineering,” Tissue Engineering and Regenerative Medicine Society Annual Meeting, Houston, TX (2011).
10. **E. Jabbarzadeh**, I. Aria and M. Gharib, “Engineered carbon nanotube substrates for programming stem cell fate,” Society for Biomaterials Annual Meeting, Seattle, WA, April 21-24 (2010).
9. **E. Jabbarzadeh** and A. R. Asthagiri, “Quantitative analysis of fibroblast focal adhesions,” Biomedical Engineering Society Annual Fall Meeting, St. Louis, MO, 2008.
8. **E. Jabbarzadeh** and C. T. Laurencin, “Human endothelial cell growth and gene expression on three dimensional poly(lactic acid-co-glycolic acid) sintered microsphere scaffold for bone tissue engineering,” Annual Meeting of American Institute of Chemical Engineers, San Francisco, CA, 2006.
7. **E. Jabbarzadeh** and C. F. Abrams, “Strategies to enhance capillary formation inside biomaterials: A computational study,” Annual Meeting of the American Institute of Chemical Engineers, Cincinnati, OH, 2005.
6. **E. Jabbarzadeh** and C. F. Abrams, “Capillary formation inside 2D porous domains: A computational study,” Biomedical Engineering Society Annual Fall Meeting, Baltimore, MD, 2005.
5. **E. Jabbarzadeh** and C. F. Abrams, “Simulation of cell chemotaxis in 2D random porous domains,” Gordon Research Conference on Gradient Sensing and Directed Cell Migration, Ventura, CA, 2005.
4. **E. Jabbarzadeh** and C. F. Abrams, “Chemotaxis and random motility in unsteady chemoattractant fields: A computational study,” Annual Meeting of the American Institute of Chemical Engineers, Austin, TX, 2004.
3. **E. Jabbarzadeh** and C. F. Abrams, “Chemotactic cell migration in inhomogeneous domains: A Computational Study,” Biomedical Engineering Society Annual Fall Meeting, Philadelphia, PA, 2004.

2. **E. Jabbarzadeh** and C. F. Abrams, "Computational Studies of Cell Migration," 30th Annual Northeast Bioengineering Conference, Springfield, MA, 2004.
1. **E. Jabbarzadeh** and C. F. Abrams, "Computational Studies of Cell Migration," 17th Annual Mid-Atlantic Biochemical Engineering Meeting, University of Maryland, Baltimore County, MD, 2004.

INVITED SEMINARS

- **University of California Irvine**, Department of Mechanical Engineering (2015)
- **NC State University**, Department of Chemical Engineering (2015)
- **Ege University, Turkey**, Department of Bioengineering (2013)
- **University of Wisconsin-Milwaukee**, Bioengineering Program (2012)
- **Drexel University**, Department of Chemical and Biological Engineering (2010)
- **University of California, Merced**, School of Engineering (2009)
- **Polytechnic Institute of NYU**, Department of Chemical Engineering (2009)
- **Texas A&M University**, Department of Chemical Engineering (2009)

FUNDED RESEARCH

- Title: EAGER: Modulation of the Inflammatory Response for Accelerated Tissue Vascularization and Bone Regeneration
Role: PI Sponsor: NSF 7/1/2016 to 9/1/2017
- Title: Unraveling the Role of Asymmetric Division in Lineage Specification of Stem Cells
Role: PI Sponsor: NIAMS/NIH 7/1/2015 to 9/1/2018
- Title: Programming stem cells in an inflammatory microenvironment
Role: COBRE Target Faculty Sponsor: NIGMS/NIH 8/1/2015 to 8/1/2017
- Title: Unravelling the Effect of Microgravity on Bone Formation
Role: PI Sponsor: SC Space Grant Consortium/NASA 9/1/2012 to 9/1/2015
- Title: Programming Stem Cells in an Inflammatory Microenvironment
Role: COBRE Pilot Grant Faculty Sponsor: NIGMS/NIH 7/1/2013 to 7/1/2015
- Title: Unravelling the Effects of Microgravity on Bone Formation
Role: PI Sponsor: SC Space Grant Consortium 9/1/2014 to 9/1/2015
- Title: Identity the Molecular Basis for Stem Cell Spheroid Fusion and Vascular Maturation
Role: PI Sponsor: SC EPSCoR/IDeA Program/NSF 10/1/2012 to 7/1/2013
- Title: The Utility of the Carbon Nanotube for Modulating Matrices in the Microenvironment
Role: Sub-Contract Sponsor: Lawrence Berkeley Labs 9/1/2013 to 12/1/2013
- Title: Nanoengineering stem cell cardiogenic lineage commitment
Role: PI Sponsor: USC-ASPIRE 6/1/2012 to 6/1/2013

PROFESSIONAL SERVICE ACTIVITIES

Proposal reviewer

- NSF SBIR-Regenerative Medicine (2016-2017)
- NIH Bioengineering Research Partnership (BRP) study section (2015)
- NIH Musculoskeletal Tissue Engineering (MTE) study section (2012-2013)
- NIH Biomaterials and Biointerfaces study section (2012)
- NSF Biomechanics and Mechanobiology review panel (2012)
- NSF Engineering Research Centers (ERC) review panel (2011)

Reviewer for scientific journals

- Tissue Engineering; Acta Biomaterialia; Langmuir; Biotechnology & Bioengineering; Regenerative Engineering; Biomaterials; Nature Communications; Biomaterials Science Polymer Ed; Advanced Functional Materials; ACS Nano

University service

- Member of the University Committee for Academic Responsibility; Member of the Academic Integrity Committee, College of Engineering; Member of the Graduate Research Committee, Department of Chemical Engineering